

Customer No.: 31561  
Application No.: 10/708,353  
Docket NO.: 10785-US-PA

### REMARKS

#### Present Status of the Application

Claims 1-6 are objected to because of some informalities. Claims 2 and 8 are rejected under 35 USC. 112. Claims 1-6 are rejected under 35 U.S.C. 103(a), as being unpatentable over Wang (U.S. 2003/0085780) in view of Yamaguchi (JP 02-206201). Claims 1-10 are rejected under 35 U.S.C. 103(a), as being unpatentable over Ishikawa et al. (JP 63-219202) in view of Ikeda (JP 03-049301). Applicants have canceled claims 5, 7-10 and have amended the claims 1-4 and 6 to overcome the objection and rejections. After entry of the foregoing amendments, claims 1-4 and 6 remain pending in the present application, and reconsideration of those claims is respectfully requested.

#### Discussion of Amendment

Applicants have made amendment to the "parallel-coupled-resonator filter" in the title and description of the whole specification, which are amended to "microstrip line parallel-coupled-resonator filter" for clarifying the invention. As stated in the paragraph [0006], lines 1-3, "Referring to FIG. 1, it schematically shows a diagram of a conventional three-resonators microstrip line parallel-coupled-resonator filter used in the microwave band." And as stated in the paragraph [0007], lines 1-3. "For The disadvantages of the microstrip coupled line filter are as follows: 1. The frequency response of the conventional microstrip line parallel-coupled-resonator filter is shown in FIG. 2, the stop band attenuation rate is not fast enough to eliminate image signal", for solve the problem, the present invention provides "a parallel-coupled-resonator filter with open-and-short end can achieve fast attenuation of the stop band to eliminate the image signal. At the same time, keep the compact size of filter." (paragraph [0008], lines 1-3).

The invention relates to a "microstrip line parallel-coupled-resonator filter" which is also defined in the paragraph [0021], which states "To verify the frequency response of the filter, herein the input port 310, the first resonator 320, the second resonator 330, the

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third resonator 340, and the output port 350 are manufactured on a substrate having a dielectric constant of 3.38 and a thickness of 20 mils. The general circuit board manufacturing method is used as its manufacturing method, in other words, photographing, chemical manufacturing process (including adding photoresist, exposure, etching) have been applied." People skilled in the art knew, at that time the invention made, that the filter made in the same substrate using general circuit board manufacturing method is a microstrip line filter, which can also be supported in the FIG.3. It is believed no new matters are added and entry of the foregoing amendments are respectfully requested.

#### Discussion of Objections

Claims 1, 5, 10 are objected to because of some informalities. Claim 1 is amended to overcome the objection. Claims 5 and 10 are canceled and the objections set forth are moot.

#### Discussion of Rejection Under 35 USC. 112

Claims 2 and 8 are rejected under 35 USC. 112. Claim 8 is canceled, which render the rejection set forth is moot. Claim 2 is amended as "wherein a portion of the input port and a portion of the output port are facing in a same direction, resulting in a weak cross coupling, wherein the distance between the portion of the input port and the portion of the output port is used to design upper stop-band transmission zero." It is clear how input and output ports are located in relation to resonators for a weak cross coupling. Reconsideration of the claim is respectfully requested.

#### Discussion of Office Action Rejections

Claims 1-6 are rejected under 35 U.S.C. 103(a), as being unpatentable over Wang (U.S. 2003/0085780, "Wang" hereinafter) in view of Yamaguchi (JP 02-206201, "Yamaguchi" hereinafter). Claims 1-10 are rejected under 35 U.S.C. 103(a), as being

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unpatentable over Ishikawa et al. (JP 63-219202, "Ishikawa" hereinafter) in view of Ikeda (JP 03-049301, "Ikeda" hereinafter). Applicants respectfully traverse the rejections for at least the reasons set forth below.

**Rejection addressed by combining Wang and Yamaguchi**

Wang relates to an "asymmetric high frequency filtering apparatus", as stated in the Abstract, "the filter structure is made up by the multilayer to reduce high frequency band-pass filter size", the filtering apparatus is made up with multiple layers. However, the microstrip line parallel-coupled-resonator filter as claimed in the invention is a microstrip filter which use a single layer substrate, which is different from Wang.

Furthermore, neither Wang nor Yamaguchi does not the feature that "cross coupling exist through a gap between the first resonator and the third resonator, wherein the gap is used to design lower stop-band transmission zero" as claimed in amended claim 1.

Consequently, the combination of Wang in view of Yamaguchi does not render claim 1 obvious, and the rejection should be withdrawn.

Because independent claim 1 is allowable over the prior art of record, its dependent claims 2-4 and 6 are allowable as a matter of law, for at least the reason that these dependent claims contain all features of their respective independent claim 1. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Additionally and notwithstanding the foregoing allowability of these dependent claims, the dependent claims recite further features and/or combinations of features (as is apparent by examination of the claim itself) that are patentably distinct from the prior art of record. Hence, there are other reasons why this dependent claim is allowable.

Amended dependent claim 2 states "a portion of the input port coupling to the first resonator and a portion of the output port coupling to the third resonator are facing in a same direction, resulting in a weak cross coupling, wherein the distance between the portion of the input port and the portion of the output port is used to design upper

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stop-band transmission zero.” Neither *Wang* nor *Yamaguchi* does not disclose, teach, or suggest the feature that “a gap between the first resonator and the third resonator is used to design lower stop-band transmission zero” and “the distance between the portion of the input port and the portion of the output port is used to design upper stop-band transmission zero” as defined in claim 2.

**Rejection addressed by combining Ishikawa and Ikeda**

*Ishikawa* relates to an “strip line filter”, however, neither *Ishikawa* nor *Ikeda* does not the feature that “a cross coupling exist through a gap between the first resonator and the third resonator, wherein the gap is used to design lower stop-band transmission zero” as claimed in amended claim 1. More particularly, the “strip line filter” of *Ishikawa* can not generate the “transmission zero” at all. Furthermore, neither *Ishikawa* nor *Ikeda* does not disclose “a gap between the first resonator and the third resonator for use to design the lower stop-band transmission zero.”

Consequently, the combination of *Ishikawa* in view of *Ikeda* does not render claim 1 obvious, and the rejection should be withdrawn.

Because independent claim 1 is allowable over the prior art of record, its dependent claims 2-4 and 6 are allowable as a matter of law, for at least the reason that these dependent claims contain all features of their respective independent claim 1. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Amended dependent claim 2 states “a portion of the input port and a portion of the output port are facing in a same direction, resulting in a weak cross coupling, wherein the distance between the portion of the input port and the portion of the output port is used to design upper stop-band transmission zero.” Neither *Ishikawa* in view of *Ikeda* does not disclose, teach, or suggest the feature that “a gap between the first resonator and the third resonator is used to design lower stop-band transmission zero” and “the distance between the portion of the input port and the portion of the output port is used to design upper stop-band transmission zero” as defined in claim 2.



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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1-4 and 6 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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